

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/001373

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C23F11/16

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C23F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 1 130 540 A (GODDARD & SONS LTD J) 16 October 1968 (1968-10-16) cited in the application claims 1-10	1-4, 9-20
Y	HAN S M ET AL: "FORMATION OF ALKANETHIOL MONOLAYER ON GE(111)" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, XX, XX, vol. 123, 2001, pages 2422-2425, XP001193899 WASHINGTON, US ISSN: 0002-7863 cited in the application *abstract* page 2423, left-hand column, paragraphs 1,2	1-4, 9-20

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*A\* document member of the same patent family

Date of the actual completion of the international search

20 July 2004

Date of mailing of the international search report

29/07/2004

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB2004/001373

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 255 348 A (METALEUROP RECH) 4 November 1992 (1992-11-04) cited in the application claims 1-8	1-4,9-20
A	WO 02/095082 A (JOHNS PETER GAMON) 28 November 2002 (2002-11-28) cited in the application claims 1,19-22	1-4,9-20
A	US 3 503 883 A (COX BERNARD CARLTON ET AL) 31 March 1970 (1970-03-31) claim 1	1-4
A	GB 1 070 384 A (GODDARD & SONS LTD J) 1 June 1967 (1967-06-01) claim 1	1-4
A	US 3 398 003 A (CARPENTER JAMES H ET AL) 20 August 1968 (1968-08-20) cited in the application claim 1	1-4
A	EP 1 130 124 A (NIPPON GERMANIUM LAB CO LTD) 5 September 2001 (2001-09-05)	
A	EP 0 729 398 A (JOHNS PETER GAMON) 4 September 1996 (1996-09-04) cited in the application	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/001373

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 1130540	A	16-10-1968	CH 467875 A DE 1621459 A1 NL 6702308 A	31-01-1969 22-07-1971 21-08-1967
GB 2255348	A	04-11-1992	FR 2675817 A1 BE 1006333 A3 DE 4213897 A1 IT 1259562 B	30-10-1992 26-07-1994 05-11-1992 20-03-1996
WO 02095082	A	28-11-2002	WO 02095082 A2	28-11-2002
US 3503883	A	31-03-1970	GB 1070384 A DE 1243808 B	01-06-1967 06-07-1967
GB 1070384	A	01-06-1967	DE 1243808 B US 3503883 A	06-07-1967 31-03-1970
US 3398003	A	20-08-1968	NONE	
EP 1130124	A	05-09-2001	JP 3025245 B2 JP 2000144283 A AU 759340 B2 AU 4393499 A CA 2347686 A1 EP 1130124 A1 US 6506267 B1 CN 1306584 T WO 0026423 A1	27-03-2000 26-05-2000 10-04-2003 22-05-2000 11-05-2000 05-09-2001 14-01-2003 01-08-2001 11-05-2000
EP 0729398	A	04-09-1996	GB 2283933 A AU 682734 B2 AU 1032095 A DE 69408689 D1 DE 69408689 T2 DK 729398 T3 EP 0729398 A1 FI 962115 A LV 11599 A RU 2124973 C1 AT 163382 T CA 2176919 A1 ES 2112633 T3 WO 9513900 A1 GB 2283934 A ,B LV 11599 B	24-05-1995 16-10-1997 06-06-1995 02-04-1998 18-06-1998 23-12-2002 04-09-1996 17-05-1996 20-12-1996 20-01-1999 15-03-1998 26-05-1995 01-04-1998 26-05-1995 24-05-1995 20-06-1997

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/GB2004/001373

International filing date (day/month/year)  
30.03.2004

Priority date (day/month/year)  
31.03.2003

International Patent Classification (IPC) or both national classification and IPC  
C23F11/16

Applicant  
COLE, Paul Gilbert

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/001373

**Box No. I Basis of the opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/001373

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-20
	No: Claims	
Inventive step (IS)	Yes: Claims	5-8
	No: Claims	1-4,9-20
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V.**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

The following documents are referred to in this communication:

- D1: GB-A-1 130 540 (GODDARD & SONS LTD J) 16 October 1968 (1968-10-16)
- D2: HAN S M ET AL: "FORMATION OF ALKANETHIOL MONOLAYER ON GE(111)" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, XX, XX, vol. 123, 2001, pages 2422-2425, XP001193899 WASHINGTON, US ISSN: 0002-7863
- D3: GB-A-2 255 348 (METALEUROP RECH) 4 November 1992 (1992-11-04)
- D4: WO 02/095082 A (JOHNS PETER GAMON) 28 November 2002 (2002-11-28)

1. The document D1 is regarded as being the closest prior art to the subject-matter of claims 1,19,20 and shows (see claims 1-4,9,10,11) the use of alkanethiols or thioglycollates with 12 to 24 carbon atoms in the chain for treating silver and silver alloys to reduce tarnishing. The subject-matter of claims 1,19 and 20 differs from this known state of the art in that silver alloys containing germanium are treated. The subject-matter of claims 1,19 and 20 is therefore new (Article 33(2) PCT).

1.1 Claims 2-4, 9-18 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty.

2 . With regard to the disclosure of D1 the problem to be solved by the present invention may be regarded as reducing further the tarnishing.

The solution to this problem as defined in claims 1,19 and 20, does not involve an inventive step (Article 33(3) PCT) for the following reasons:

It is known from D2 that the compounds used in D1 do form a protective layer on germanium. It is thus obvious to the skilled man that the recently developed germanium containing Ag alloys (see D3 and D4) can also be treated by the process of D1.

2.2 Dependent claims 2-4, 9-18 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in

respect of inventive step (Article 33 (3) PCT) because these feature are disclosed in one or more of the above cited documents ( see passages referred to in the search report).

3 Dependent claims 5-8 meet the requirements of the PCT in respect of inventive step (Article 33 (3) PCT) because their subject matter is notdisclosed nor suggested in the prior art.

4. The invention shall be considered as susceptible of industrial application because it can be used in the metal finishing industry.